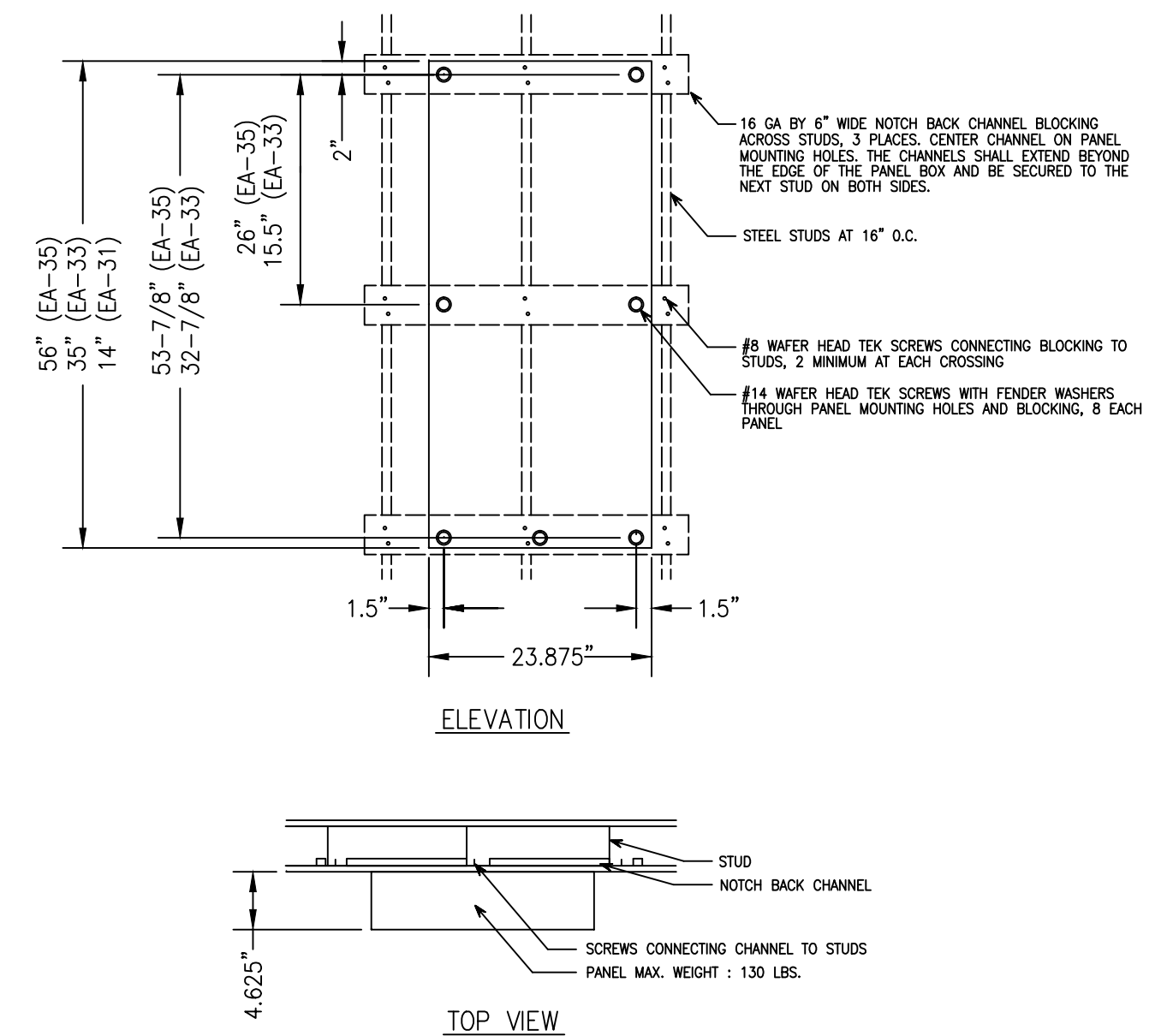
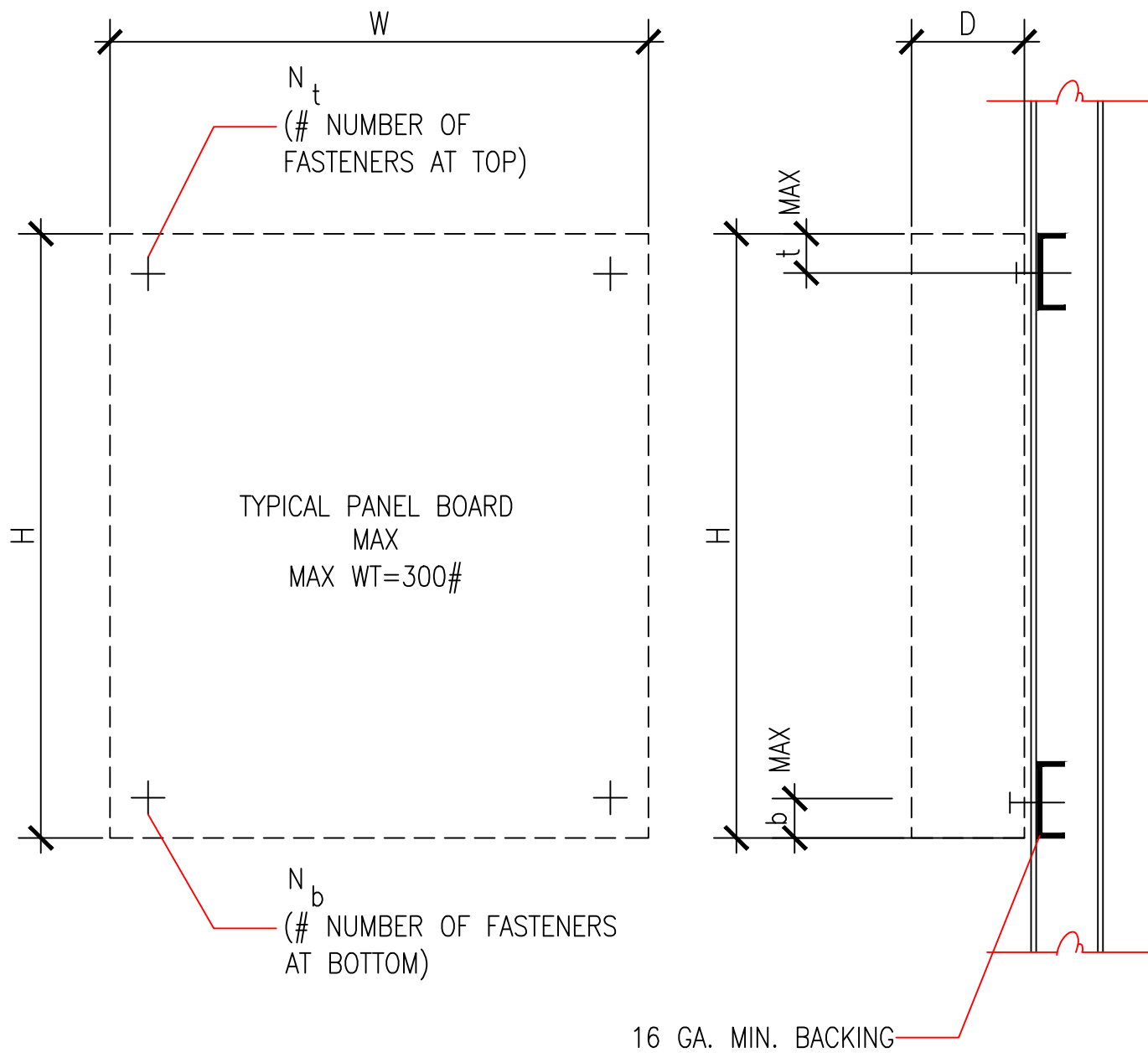


(E) MOUNTING DETAILS



TYPICAL MOUNTING DETAIL OF
SYSTEM-3 ENCLOSURE

TYPICAL PANEL MOUNTING DETAIL

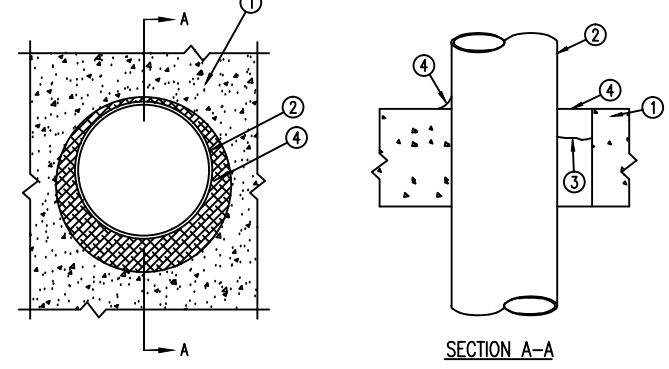


TYPICAL FASTENERS:
AT METAL BACKING USE #14 HHMS W/ WASHERS
AT CONCRETE WALL USE 3/4\"/>

1 TYP MTG OF EQUIP. WEIGHING OVER 20 LBS.
(300 LBS MAXIMUM)

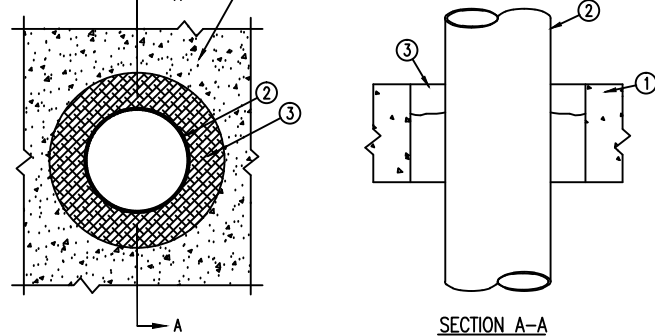
(E) THROUGH-PENETRATION FIRESTOP
SYSTEM DETAILS

SYSTEM NO. CAJ1044
T RATING - 0 HR
L RATING AT AMBIENT - 2 CFM/SQ FT (SEE ITEM 4)
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT (SEE ITEM 4)



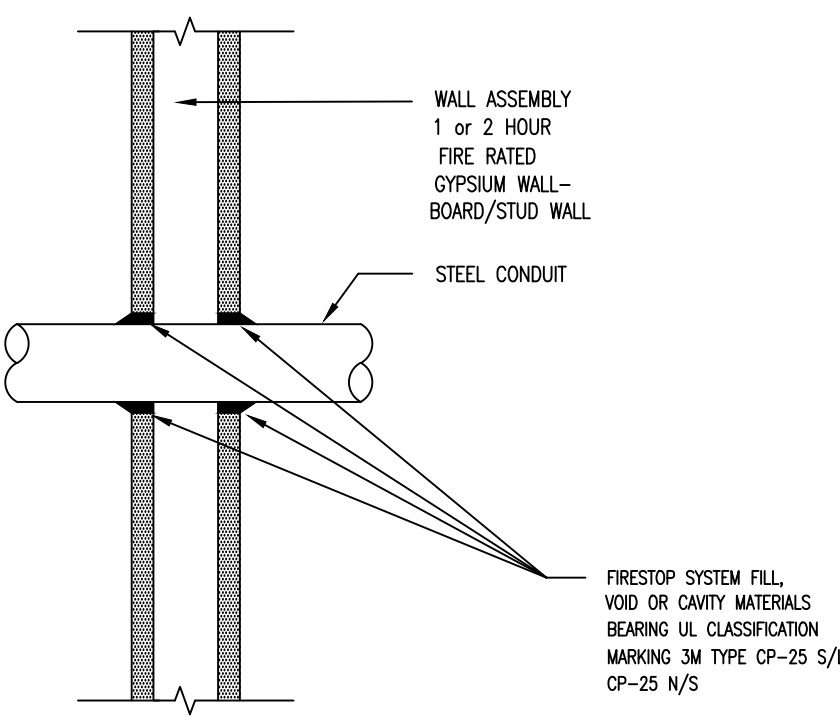
- FLOOR WALL ASSEMBLY-LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PSI) CONCRETE, EXCEPT AS NOTED IN TABLE UNDER ITEM 4. MIN THICKNESS OF SOLID CONCRETE FLOOR OR WALL ASSEMBLY IS 4-1/2 IN. FLOOR MAY ALSO BE CONSTRUCTED OF ANY MIN 4 IN THICK UL CLASSIFIED HOLLOW-CORE PRECAST CONCRETE UNITS WHEN FLOOR IS CONSTRUCTED OF HOLLOW-CORE PRECAST CONCRETE UNITS. PACKING MATERIALS (ITEM 3) AND CAULK FILL MATERIAL (ITEM 4) TO BE INSTALLED SYMMETRICALLY ON BOTH SIDES OF THE FLOOR FLOOR WITH FLOOR SURFACE. WALL ASSEMBLY MAY ALSO BE CONSTRUCTED OF CLASSIFIED CONCRETE BLOCKS. MAX DIA. OF OPENING IS 32 IN. (SEE CONCRETE BLOCKS (CAZT) AND PRECAST CONCRETE UNITS (CPN) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURER)
 - STEEL SLEEVE - (OPTIONAL NOT SHOWN) NOM 16 IN. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL SLEEVE CAST OR GRouted INTO FLOOR OR WALL ASSEMBLY. SLEEVE MAY EXTEND A MAX OF 2 IN. ABOVE TOP FLOOR OR BEYOND EITHER SURFACE OF WALL.
 - PIPE OR CONDUIT - NOM 30 IN DIA. (OR SMALLER) CAST IRON OR SCHEDULE 10 (OR HEAVIER) STEEL PIPE, NOM 8 IN DIA. (OR SMALLER) STEEL CONDUIT, NOM 3 IN DIA. (OR SMALLER) TYPE L (OR HEAVIER) COPPER PIPE OR NOM 4 IN DIA. (OR SMALLER) STEEL ELECTRICAL METAL TUBING. MAX ANNUAL SPACE BETWEEN PIPE OR CONDUIT AND EDGE OF THROUGH OPENING NOT TO EXCEED 2 IN. MAX ANNUAL SPACE BETWEEN PIPE OR CONDUIT AND EDGE OF THROUGH OPENING IS 0 IN. (POINT CONTACT). PIPE OR CONDUIT TO BE RIDELY SUPPORTED ON BOTH SIDE OF FLOOR OR WALL ASSEMBLY.
 - PACKING MATERIAL - POLYETHYLENE BOARDS RIGID OR NOM 8 IN THICKNESS OF THERMO-INSULATED MINERAL WOOL BATT OR GLASS FIBER INSULATION FORMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL (ITEM 4).
 - FILL VOID OR CAVITY MATERIAL - CAULK - APPLIED TO FILL THE ANNUAL SPACE FLUSH WITH TOP SURFACE OF FLOOR. IN WALL ASSEMBLIES, REQUIRED CAULK THICKNESS TO BE INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL FLUSH WITH WALL SURFACE. THE HOURS F RATING AND THE MIN REQUIRED CAULK THICKNESS ARE DEPENDENT UPON A NUMBER OF PARAMETERS, AS SHOWN ON THE FOLLOWING TABLE.
- | MIN FLOOR OR WALL THICKNESS, IN | NOM PIPE OR CONDUIT DIA. IN | MAX ANNUAL SPACE, IN | MAX CAULK THICKNESS, IN | F RATING, HR |
|---------------------------------|-----------------------------|----------------------|-------------------------|--------------|
| 2-1/2 | 1/2-12 | 1-3/8 | 1/2 | 2 |
| 2-1/2 | 1/2-12 | 2-7/8 | 1/2 | 2 |
| 4-1/2 | 1/2-12 | 1-3/8 | 1/2 | 2 |
| 4-1/2 | 1/2-12 | 1-1/4 | 1/2 | 2 |
| 4-1/2 | 1/2-20 | 2 | 1 | 3 |
| 4-1/2 | 22-30 | 1-3/8 | 1/2 | 3 |
| 4-1/2 | 17-18 | 1-3/8 | 1/2 | 3 |
- (a) MIN 2 IN THICKNESS OF MINERAL-WOOL BATT INSULATION REQUIRED IN ANNUAL SPACE.
(b) MIN 1 IN THICKNESS OF MINERAL-WOOL BATT INSULATION REQUIRED IN ANNUAL SPACE ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. MIN IN THICKNESS OF CAULK TO BE INSTALLED FLUSH WITH EACH SURFACE OF FLOOR OR WALL ASSEMBLY.
- MINNEAPOLIS WIRING & MFG. CO. - TYPES CP-25 WL, CP-25 WB+
(NOTE: L RATING AND OR SIZE OF OPTIONAL SLEEVE APPLY ONLY WHEN TYPE CP-25WB+ CAULK IS USED)

SYSTEM NO. CAJ1027
F RATING - 3 HOUR
T RATING - 0 HOUR

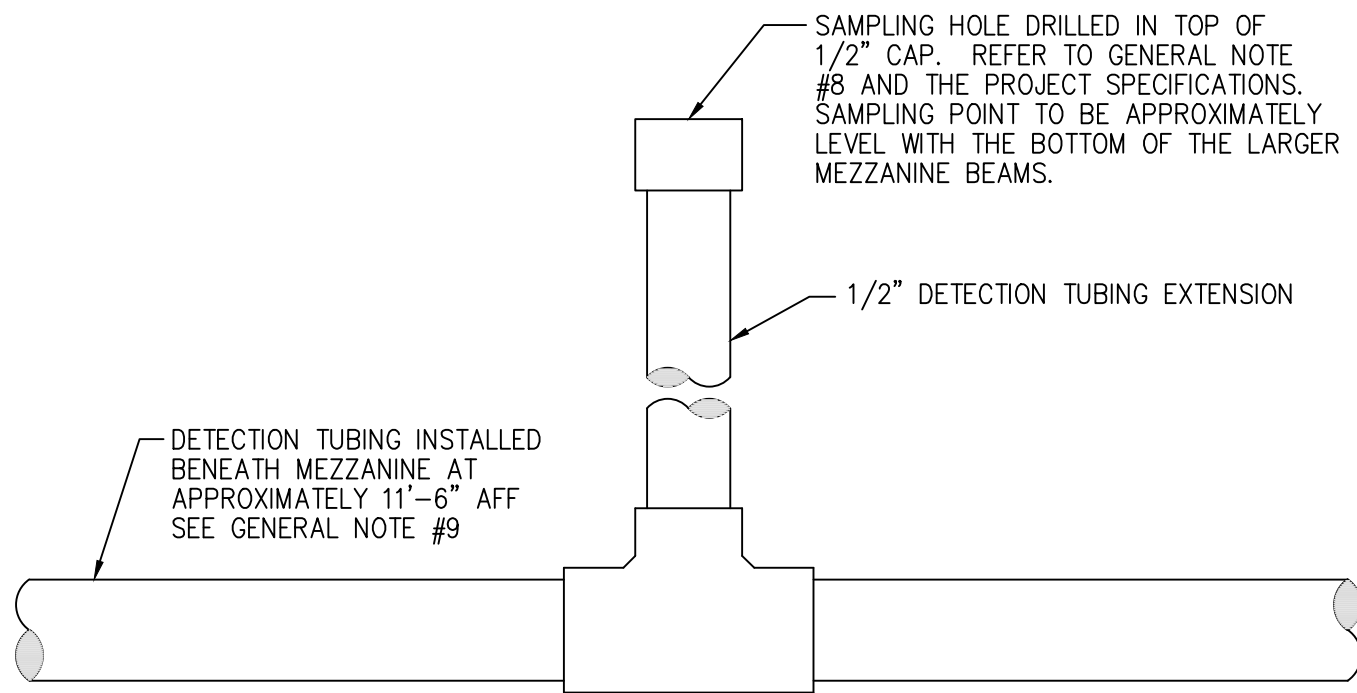


- FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN THICK LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS. MAX THROUGH OPENING SIZE IS 12.4 SQ. IN.
 - SEE CONCRETE BLOCKS (CAZT) CATEGORY IN FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
 - PIPE OR CONDUIT - NOM 10 IN DIA. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE, NOM 8 IN DIA. (OR SMALLER) PRECAST CONCRETE UNIT OR 4 IN DIA. (OR SMALLER) STEEL PIPE OR NOM 3 IN DIA. (OR SMALLER) TYPE L (OR HEAVIER) COPPER PIPE. MAX ONE PIPE OR CONDUIT PER THROUGH OPENING. MAX ANNUAL SPACE BETWEEN PIPE OR CONDUIT AND EDGE OF OPENING IS 3/4 IN. MAX ANNUAL SPACE BETWEEN PIPE OR CONDUIT AND EDGE OF OPENING IS 0 IN. (POINT CONTACT). PIPE OR CONDUIT TO BE RIDELY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
 - FILL VOID OR CAVITY MATERIALS - PUTTY-WADABLE PUTTY MATERIAL, MIXED BY HAND AND APPLIED TO FILL ANNUAL SPACE TO A MIN DEPTH OF 1 IN FLUSH WITH TOP SURFACE OF FLOOR. IN WALL ASSEMBLIES, REQUIRED PUTTY THICKNESS TO BE INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL.
- MINNEAPOLIS WIRING & MFG. CO. - MFS-24
BEARING THEIR CLASSIFICATION MARKING.

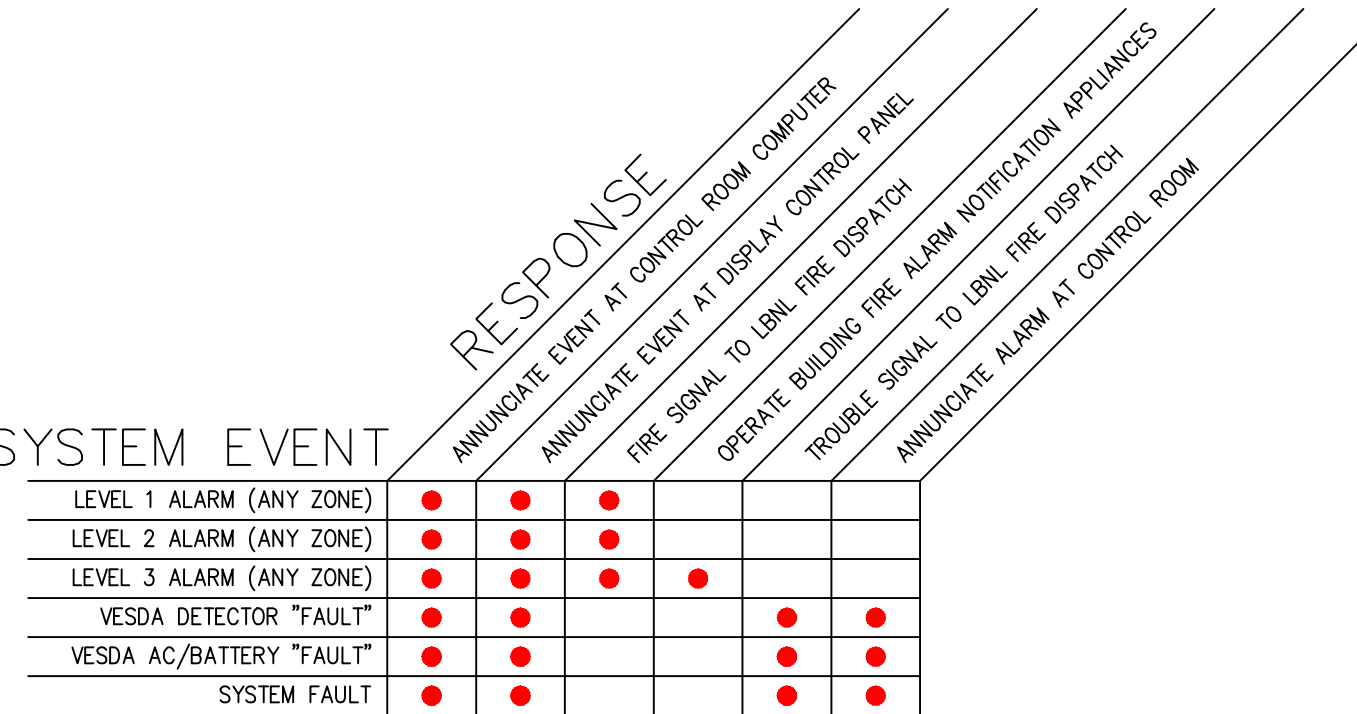
SYSTEM NO. WL1001
F RATING - 1 & 2 HOUR
T RATING - 0, 1, 1-1/2 & 2 HOUR



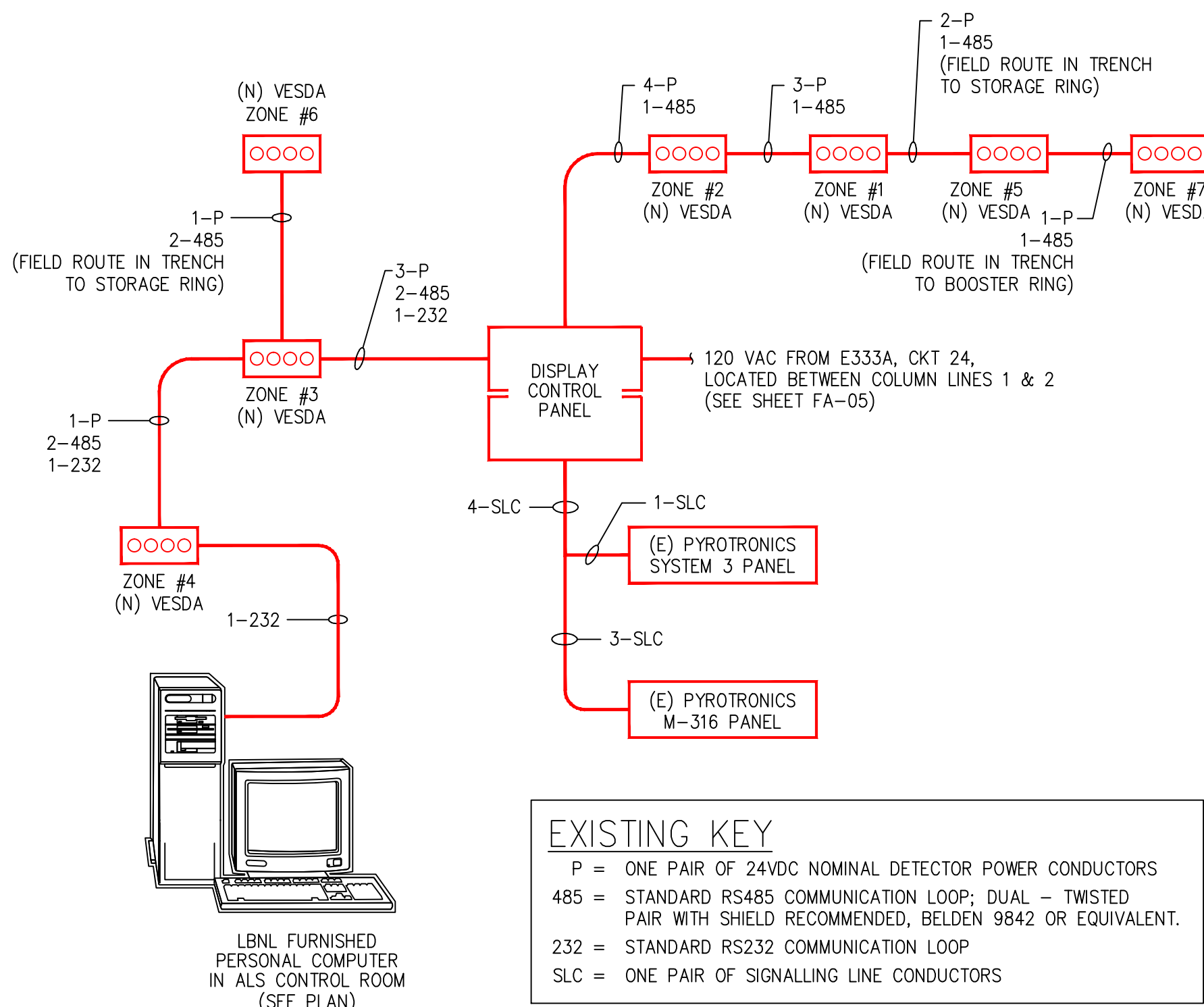
- SEAL ALL PENETRATIONS IN ACCORDANCE WITH APPLICABLE CODES TO PRESERVE ORIGINAL FIRE HOUR RESISTANCE OF WALLS, FLOORS OR CEILING. USE UL DIRECTORY ASSEMBLY NOS. 49 & 328, AS APPLICABLE FOR ALL FIRE WALL PENETRATIONS.
- AT FIRE SEPARATION WALLS, WRAP CONDUIT WITH 3M CONDUIT WRAP 15-195 TO WITHIN 1/4\"/>



TYPICAL UNDER MEZZANINE SAMPLING POINT

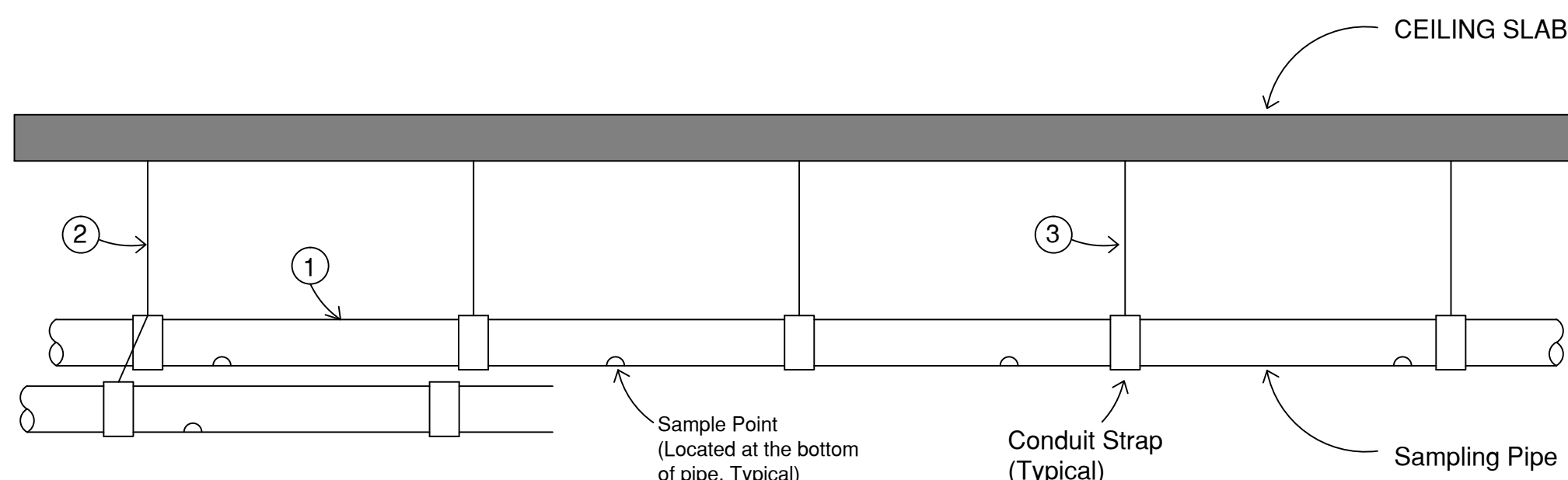


VESDA SYSTEM LOGIC CHART



BLOCK DIAGRAM FOR SYSTEM CONNECTIVITY

- NO SCALE -



- PIPING IS EXISTING. CUSTOMER WILL BE MODIFYING PIPE RUNS TO BE HOMERUN BACK TO EACH DETECTOR AS SHOWN ON THE PLANS.
- EXISTING PIPE HANGERS WILL BE UTILIZE TO ACCOMMODATE 2 PIPES WHERE APPLICABLE. SOME PIPES MAY REQUIRE NEW HANGERS WHICH WILL BE DETERMINED IN THE FIELD. SEE NOTE 3.
- PIPE SUPPORT TO CEILING SLAB: #1 3/4\"/>

TYPICAL SAMPLING PIPE INSTALLATION DETAIL

THE DRAWING AND DESIGN HEREIN SHALL NOT BE REPRODUCED, COPIED, OR DISCLOSED TO OTHERS FOR REPRODUCTION OR OTHER PURPOSE (EXCEPT AS OTHERWISE AUTHORIZED BY CONTRACT) WITHOUT WRITTEN PERMISSION OF SIEMENS BUILDING TECHNOLOGIES, INC. THE SILENT DESIGN, ALL OTHER PERMISSIONS SHALL BEAR THIS NOTICE.

REVISIONS

No.	Revision	By	Date	Appr.
1	REVISED PER LBNL FM REVIEW COMMENTS 6-4-12	JPM	6/5/12	KW
2	AS-BUILT	JPM	9/19/12	KW

AS-BUILT

C - APPROVAL STAMP

INSTALLATION CONTRACTORS NAME & ADDRESS:

M & M ELECTRIC

1009 Gettysburg Way,
Modesto, CA 95355
Tel (209) 204-2798

PRODUCT MANUFACTURER:

Siemens Industry, Inc.
Fire Safety Division

25821 Industrial Boulevard, Suite 300
Hayward, California 94545-2991
Tel (510) 783-6000 Fax (510) 293-2100
California State C10 License No. 758796
U.L. Certificate ID No. 324787-001

JOB NAME & LOCATION (STREET ADDRESS)

UNIVERSITY OF CALIFORNIA
LAWRENCE BERKELEY NATIONAL LABORATORY
FACILITIES DIVISION

BUILDING 6
VESDA

One Cyclotron Road,
Berkeley, California 94720

PROJECT CONTAINS:

(E) MISCELLANEOUS
NOTES & DETAILS

INSTALLATION TYPE:

- ☐ NEW INSTALLATION
☐ DESIGN/BUILD
☐ PER CONTRACT DOCUMENT
☐ EXISTING BASE JOB # N/A
☐ OTHERS

SYSTEM SALES REP: Kevin Waxman

PROJECT MANAGER: Karen Davis

DRAWN BY: JPM

FIELD FILENAME: FA-02

NOTED: Not Applicable

DATE DRAWN: May 28, 2010

DATE DATE: March 18, 2014

DRAWING NO.
5B06E347

FA-02
440P-109114